

CLAIMS

1. A paint for plastic or metallic materials comprising:

- a) one or more acrylic-based resins that can undergo cross-linking by exposure to ultraviolet (UV) radiation ;
- b) one or more photo-initiators as sources of free radicals present in a amount ranging between 0.5 wt% and 5.0 wt%, to induce cross-linking of said acrylic resin in the presence of UV radiation;
- c) one or more fillers;
- d) a dispersion of waxes in solvents for orienting said fillers; and
- e) levelling additives;

in which said acrylic-based resin comprises a urethane-acrylate oligomer in a weight percentage of between 30 wt% and 60 wt%.

2. The paint according to Claim 1, characterized in that said urethane-acrylate oligomer is of an aromatic type.

3. The paint according to Claim 1 or Claim 2, characterized in that said urethane-acrylate oligomer is of a bifunctional type.

4. The paint according to any one of the foregoing Claims 1 to 3, characterized in that it comprises a multifunctional acrylic monomeric reactive diluent.

5. The paint according to Claim 4, characterized in that said multifunctional acrylic monomeric reactive diluent is of a bifunctional type.

6. The paint according to any one of the foregoing

Claims 1 to 5, characterized in that it comprises a wax dispersed in a solvent.

7. The paint according to Claim 6, characterized in that said wax is an ethylene-acrylic acid (EAA) copolymer or an ethylene-vinyl-acetate (EVA) copolymer, or mixtures thereof.

8. The paint according to any one of the foregoing Claims 1 to 7, characterized in that it comprises a thixotropic and anti-settling agent.

9. The paint according to Claim 8, characterized in that said thixotropic and anti-settling agent is silica-based.

10. The paint according to any one of the foregoing Claims 1 to 9, characterized in that it comprises an inorganic filler.

11. The paint according to Claim 10, characterized in that said pigmenting inorganic filler comprises a mica nucleus coated with an oxide layer, where the oxide is chosen from among titanium dioxide, iron oxide, and mixtures thereof.

12. The paint according to any one of the foregoing Claims 1 to 11, characterized in that it comprises a pigment.

13. The paint according to Claim 12, characterized in that said pigment is incorporated into a paste with a base of epoxy-acrylate resin and an acrylate monomer, which can undergo cross-linking by exposure to UV radiation.

14. The paint according to any one of the foregoing Claims 1 to 13, characterized in that the levelling additives are silicone monomers or oligomers

with acrylic functionality that can undergo cross-linking by means of UV radiation, and hydroxyfunctional silicone monomers or oligomers.

15. The paint according to any one of the foregoing Claims 1 to 14, characterized in that it comprises a mixture of two photo-initiators.

16. The paint according to Claim 15, characterized in that said mixture of photo-initiators is a mixture of bisacylphosphine oxide and α -hydroxyalkylphenyl ketone.

17. A method for painting plastic or metallic substrates, comprising the application of a paint according to any one of Claims 1 to 16 on said substrate, and cross-linking of said paint by exposure to ultraviolet radiation.

18. The method according to Claim 17, characterized in that the application of said paint on the substrate takes place by electrostatic spraying (electrospraying).

19. The method according to Claim 17 or Claim 18, characterized in that in order to facilitate application by spraying of said paint, the latter is diluted with appropriate solvents mixed in the step immediately prior to application.

20. The method according to Claim 17 or Claim 18, characterized in that it comprises the application of an electrostatic primer on the substrate to bestow the latter conductive properties prior to the painting step.

21. The method according to any one of Claims 17 to 20, characterized in that it comprises, after the

painting step, a flash-period step in which the painted substrate is heated to a temperature of between 40°C and 60°C to eliminate the excess solvent present prior to UV irradiation.

22. The method according to any one of Claims 17 to 21, characterized in that said substrate is a housing for cellphones.

23. A method for painting cellphone housings comprising:

- positioning of said housings on suitable sample-holders and transfer thereof by means of a conveyor into a treatment area;
- application of an electrostatic primer on the surface of said housings to render them conductive;
- spraying of a paint according to any one of Claims 1 to 16 with the use of two guns oriented on the top part of said housings and of one gun oriented towards the bottom side part of said housings, said housings passing twice in front of said guns, a first time in a direction with right-spin rotation and a second time in the opposite direction with left-spin rotation;
- heating of the painted housings to a temperature of between 40-60°C to evaporate part of the solvent present in the paint; and
- irradiation by means of UV light of the painted housings to obtain cross-linking of said paint.